

Summary of Lake Mead NRA GRI meeting

February 13, 2002

SUMMARY

A Geologic Resources Inventory (GRI) workshop was held for Lake Mead National Recreation Area (LAME) on February 13th, 2002. The purpose was to view and discuss the park's geologic resources, to address the status of geologic mapping for compiling both paper and digital maps, and to assess resource management issues and needs. Cooperators from the NPS Geologic Resources Division (GRD), LAME, and the United States Geologic Survey (USGS) were present for the workshop.

The workshop involved field trips to various points of interest in LAME, led by Bill Burke (LAME) and Sue Beard (USGS), as well as another half-day scoping session to present overviews of the NPS Inventory and Monitoring (I&M) program, the GRD, and the on-going GRI. Round table discussions involving geologic issues for LAME included the status of geologic mapping efforts, interpretation, sources of available data, and action items generated from this meeting.

For a list of meeting attendees, see **Appendix A (List of Cooperators for Lake Mead NP GRI Workshop, February 13, 2002)**.

OVERVIEW OF GEOLOGIC RESOURCES INVENTORY (GRI)

The NPS GRI has the following goals for some 273 units with significant natural resources:

- 1) To assemble a bibliography ("**GRBIB**") of known geological publications to compile and evaluate a list of existing geologic maps for each unit,
- 2) To conduct a scoping session for each park,
- 3) To develop digital geologic map products for use in a GIS (geographic information system), and
- 4) To complete a geologic report that synthesizes much of the existing geologic knowledge about each park.

It is stressed that the emphasis of the inventory is not to routinely initiate new geologic mapping projects, but to aggregate existing "baseline" information and identify where serious geologic data needs and issues exist in the National Recreation Area System. In cases where map coverage is nearly complete (ex. 4 of 5 quadrangles for Park "X") or maps simply do not exist, then funding may be available for geologic mapping.

After introductions by the participants, Bruce Heise (NPS-GRD) presented overviews of the Geologic Resources Division, the NPS I&M Program, the status of the Natural Resource Inventories, and the Geologic Resource Inventory in particular.

Tim Connors (NPS-NRID) presented a demonstration of some of the main features of the digital geologic database for the Black Canyon of the Gunnison NP and Curecanti NRA in Colorado. This has become the prototype for the NPS digital geologic map model as it reproduces all aspects of a paper map (i.e. it incorporates the map notes, cross sections, legend etc.) with the added benefit of being geospatially referenced. It is displayed in ESRI ArcView shape files and features a built-in Microsoft Windows help file system to identify the map units. It can also display scanned JPG or GIF images of

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the geologic cross sections supplied with the paper "analog" map. Geologic cross section lines (ex. A-A') are subsequently digitized as a line coverage and are hyperlinks to the scanned images.

GRBIB

At the scoping session, individual Microsoft Word Documents of Geologic Bibliographies for LAME were distributed.

The sources for this compiled information are as follows:

- AGI (American Geological Institute) GeoRef
- USGS GeoIndex
- ProCite information taken from specific NPS park libraries

These bibliographic compilations were validated by GRI staff to eliminate duplicate citations, typographical errors, and as well as to check for applicability to the specific park. After validation, they become part of a Microsoft Access database parsed into columns bases on park, author, year of publication, title, publisher, publication number, and a miscellaneous column for notes.

For the Access database, they are exported as Microsoft Word Documents for easier readability, and eventually turned into PDF documents. They are then posted to the GRI website at: <http://www2.nature.nps.gov/grd/geology/gri/products/geobib/> for general viewing.

EXISTING GEOLOGIC MAPS

Additionally, after the bibliographies were assembled, a separate search was made for any existing surficial and bedrock geologic maps for LAME.

See **Appendix B (*LAME Quadrangles of Interest and available digital geology*)**.

ADDITIONAL NEEDED GEOLOGIC MAPPING / RESEARCH

During the scoping session a few other notable items pertaining to geology were discussed:

GEOLOGIC REPORTS

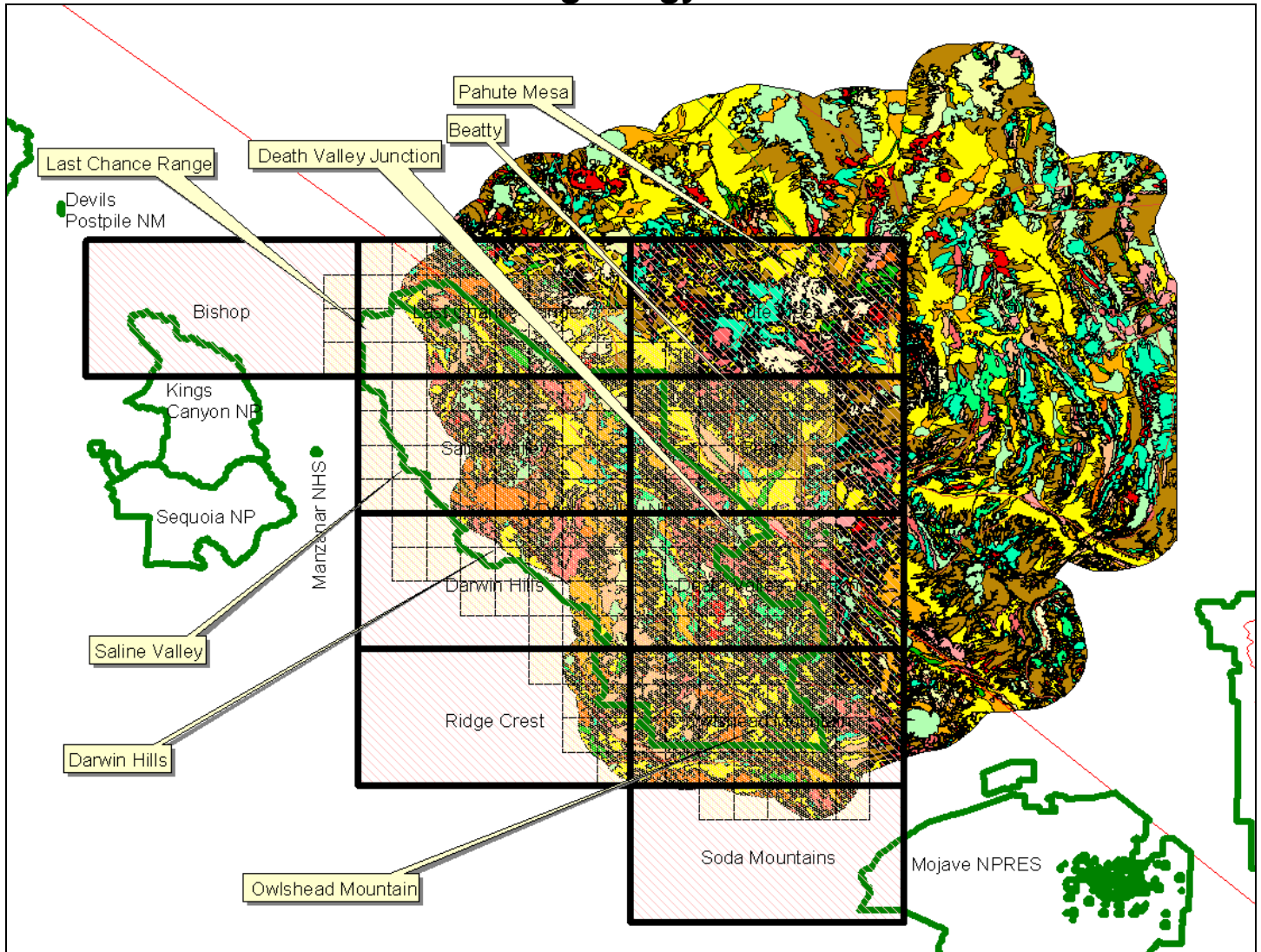
INTERPRETATION

During the scoping session, park resource managers showed interest in using the geologic maps for various interpretive examples throughout the park

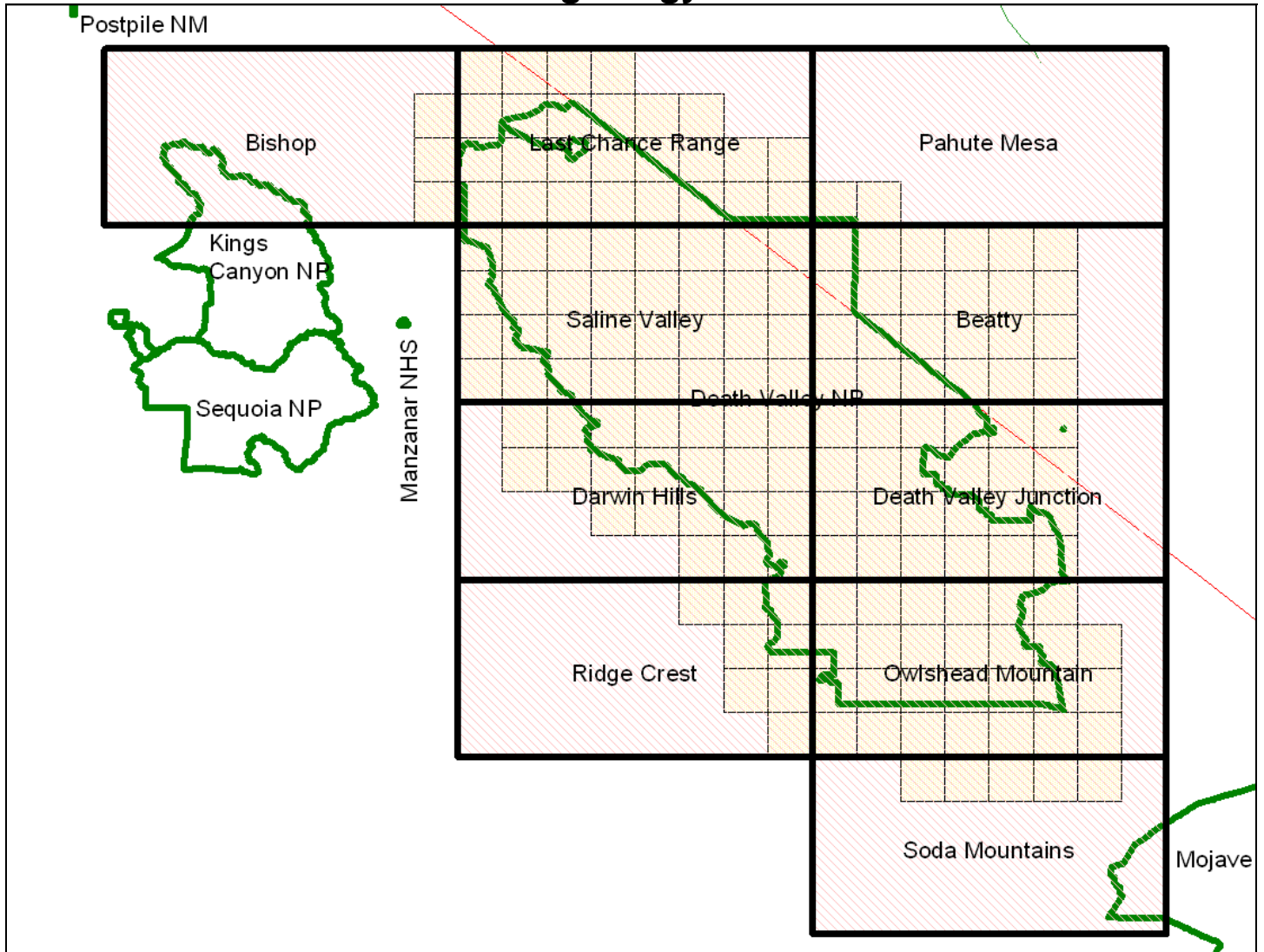
Appendix A: List of Cooperators for Lake Mead NRA GRI Workshop
February 13, 2002

LAST NAME	FIRST NAME	TYPE	AFFILIATION	TITLE	PHONE	E-MAIL	Field Trip	Scoping Session
Anderson	Dick	federal	NPS, LAME		760-786-3251	richard_l_anderson@nps.gov	no	yes
Baldino	Terry	federal	NPS, LAME		760-786-3279	terry_baldino@nps.gov	no	yes
Baldino	Cristi	federal	NPS, LAME		760-786-3266	cristi_baldino@nps.gov	no	yes
Christensen	Jon	federal	NPS, LAME		760-786-3262	jon_christensen@nps.gov	no	yes
Connors	Tim	federal	NPS, Geologic Resources Division	geologist	(303) 969-2093	Tim_Connors@nps.gov	yes	yes
Derobertis	Ed	federal	NPS, LAME		760-786-3294	ed_derobertis@nps.gov	no	yes
Essington	Mel	federal	NPS, LAME	mining engineer	760-786-3257	mel_essington@nps.gov	no	yes
Fisk	Terry	federal	NPS, LAME		760-786-3255	terry_fisk@nps.gov	no	yes
Greene	Linda	federal	NPS, LAME	natural resources	760-786-3253	linda_greene@nps.gov	no	yes
Heise	Bruce	federal	NPS, Geologic Resources Division	geologist	(303) 969-2017	Bruce_Heise@nps.gov	yes	yes
Hendrickson	Lynn	federal	NPS, LAME		760-786-3294	lynn_hendrickson@nps.gov	no	yes
Manning	Linda	federal	NPS, LAME		760-786-3252	linda_manning@nps.gov	no	yes
Moran	Toni	federal	NPS, LAME		760-786-3269	toni_moran@nps.gov	no	yes
O'Dea	Marian	federal	NPS, LAME		760-786-3278	marian_o'dea@nps.gov	no	yes
Reynolds	J.T.	federal	NPS, LAME	superintendent	760-786-3243	jt_reynolds@nps.gov	no	yes
Roche	Jim	federal	NPS, LAME	geologist	760-786-3250	jim_roche@nps.gov	no	yes
Rondthaler	Jane	federal	NPS, LAME	VIP		j_rondy@hotmail.com	no	yes
Slate	Janet	federal	USGS	geologist	303-236-1284	jslate@usgs.gov	yes	yes
Stark	John	federal	NPS, LAME	GIS	760-786-3254	john_stark@nps.gov	no	yes
Taylor	Ryan	federal	NPS, LAME		760-786-3238	ryan_taylor@nps.gov	no	yes
Thompson	Ren	federal	USGS	geologist	303-236-0929	rathomps@usgs.gov	yes	yes
Wolfe	Gerry	federal	NPS, LAME		760-786-3219	gerry_wolfe@nps.gov	no	yes
Workman	Jeremy	Federal	USGS		303-236-1257	Jworkman@usgs.gov	No	no
York	Dana	federal	NPS, LAME		760-786-3233	dana_york@nps.gov	no	yes

Appendix B: LAME quadrangles of interest and available digital geology



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USGS_NAME	State	Minimum Longitude	Minimum Latitude	Maximum Latitude	Minimum Longitude	30 x 60 sheet
Sylvania Mountains	NV	37.375	-117.625	37.5	-117.75	Last Chance Range
Sylvania Canyon	CA	37.375	-117.75	37.5	-117.875	Last Chance Range
Chocolate Mountain	CA	37.375	-117.875	37.5	-118	Last Chance Range
Horse Thief Canyon	CA	37.25	-117.75	37.375	-117.875	Last Chance Range
Soldier Pass	CA	37.25	-117.875	37.375	-118	Last Chance Range
Deep Springs Lake	CA	37.25	-118	37.375	-118.125	Bishop
East of Joshua Flats	CA	37.125	-117.75	37.25	-117.875	Last Chance Range
Joshua Flats	CA	37.125	-117.875	37.25	-118	Last Chance Range
Cowhorn Valley	CA	37.125	-118	37.25	-118.125	Bishop
East of Waucoba Canyon	CA	37	-117.75	37.125	-117.875	Saline Valley
Waucoba Mountain	CA	37	-118	37.125	-118.125	Bishop
East of Waucoba Spring	CA	36.875	-117.75	37	-117.875	Last Chance Range
Waucoba Canyon	CA	36.875	-117.875	37	-118	Saline Valley
West of Teakettle Junction	CA	36.75	-117.625	36.875	-117.75	Saline Valley
Lower Warm Springs	CA	36.75	-117.75	36.875	-117.875	Saline Valley
Pat Keyes Canyon	CA	36.75	-117.875	36.875	-118	Saline Valley
Ubehebe Peak	CA	36.625	-117.5	36.75	-117.625	Saline Valley
West of Ubehebe Peak	CA	36.625	-117.625	36.75	-117.75	Saline Valley
Craig Canyon	CA	36.625	-117.75	36.75	-117.875	Saline Valley
New York Butte	CA	36.625	-117.875	36.75	-118	Saline Valley
Nelson Range	CA	36.5	-117.625	36.625	-117.75	Saline Valley
Dolomite	CA	36.5	-117.75	36.625	-117.875	Saline Valley
Waucoba Spring	CA	36.5	-117.875	36.625	-118	Last Chance Range
Cerro Gordo Peak	CA	36.5	-117.875	36.625	-118	Saline Valley
The Dunes	CA	36.375	-117.375	36.5	-117.5	Darwin Hills
Lee Wash	CA	36.375	-117.5	36.5	-117.625	Darwin Hills
Santa Rosa Flat	CA	36.375	-117.625	36.5	-117.75	Darwin Hills
Keeler	CA	36.375	-117.75	36.5	-117.875	Darwin Hills
Nova Canyon	CA	36.25	-117.25	36.375	-117.375	Darwin Hills
Panamint Springs	CA	36.25	-117.375	36.375	-117.5	Darwin Hills
Darwin	CA	36.25	-117.5	36.375	-117.625	Darwin Hills
Talc City Hills	CA	36.25	-117.625	36.375	-117.75	Darwin Hills
Jail Canyon	CA	36.125	-117.125	36.25	-117.25	Darwin Hills
Maturango Peak NE	CA	36.125	-117.25	36.25	-117.375	Darwin Hills
Centennial Canyon	CA	36.125	-117.375	36.25	-117.5	Darwin Hills
Revenue Canyon	CA	36.125	-117.375	36.25	-117.5	Darwin Hills
China Gardens	CA	36.125	-117.5	36.25	-117.625	Darwin Hills
Ballarat	CA	36	-117.125	36.125	-117.25	Darwin Hills
Maturango Peak SE	CA	36	-117.25	36.125	-117.375	Darwin Hills
Copper Queen Canyon	CA	35.75	-117.125	35.875	-117.25	Ridge Crest
Silurian Lake	CA	35.5	-116.125	35.625	-116.25	Owlshead Mountain
Pilot Knob Valley East	CA	35.5	-117	35.625	-117.125	Ridge Crest
Slate Range Crossing	CA	35.5	-117.125	35.625	-117.25	Ridge Crest
Silurian Valley	CA	35.375	-116.125	35.5	-116.25	Soda Mountains
Red Pass Lake NE	CA	35.375	-116.25	35.5	-116.375	Soda Mountains
Red Pass Lake NW	CA	35.375	-116.375	35.5	-116.5	Soda Mountains
Drinkwater Lake	CA	35.375	-116.5	35.5	-116.625	Soda Mountains
West of Drinkwater Lake	CA	35.375	-116.625	35.5	-116.75	Soda Mountains
Layton Spring	CA	35.375	-117.875	35.5	-118	Ridge Crest

Appendix D: LAME quadrangles of interest

